

Serums and Vaccines in the Treatment of Puerperal Sepsis.—MURRAY (*British Med. Jour.*) continues the discussion of puerperal sepsis in this paper. He believes that puerperal pyelitis is not an uncommon condition but one which is frequently overlooked. If this received adequate attention many cases of sepsis readily subside. Peritoneal infection may also accompany puerperal sepsis. In these cases serums and vaccines are of very little use and if anything can be done, surgical help is required. In making a diagnosis it must be remembered that a blood culture from which no growth is obtained does not necessarily signify a sterile blood stream. If anti-streptococcus serum is given, 50 c.c. diluted with an equal amount of normal salt solution may be given intravenously. This should be repeated in from twelve to twenty-four hours unless marked improvement occurs. Fresh normal horse serum may often be added to advantage. Autogenous vaccines are also of considerable value in this condition, small doses with serum give the best results. When symptoms develop during the second week with chills, autogenous vaccines obtained by puncturing the vein during a chill, are exceedingly useful. A preparation of immunized serum from the blood of a relative or person having suitable blood and its injection into the patient, seem to be worthy of trial. The writer has had no experience in the inoculation in vaccination form of organisms devitalized but not absolutely killed. In the discussion which followed, in the Women's Hospital of Birmingham, 889 cases of puerperal sepsis, 164 died. Various methods including the Carrel, were employed without marked success. Rectal examination in place of vaginal were recommended by some. Routh, in suspicious cases is accustomed to douche the uterine cavity immediately after labor with strong iodine solution. If the temperature rises on the next day under anesthesia, the uterus should be explored by the finger, pieces of placenta or membrane removed and the interior thoroughly swabbed with gauze. From 1 to 4 per cent. solution of iodine should then be applied especially over the placental site. Fixation of the uterus or parametric thickening was considered a favorable symptom. Chloride of iron in large doses is useful.

The Diastase-content of the Urine in the Toxemias of Pregnancy.—WALLAS (*British Med. Jour.*, August 21, 1920) has examined the blood of women in normal pregnancy finding the diastase content 10 to 33.3 units. The blood urea is normal and so is blood sugar. The urea concentration tests show 2 per cent. or more. The test indicates that normal pregnant women are in a state of unstable equilibrium as regards carbohydrate metabolism and that acetone bodies are readily produced and make their appearance in the urine. In the toxemia of pregnancy there is a large quantity of diastase in the urine. The blood analysis shows urea and sugar content normal. When vomiting of pregnancy is neurotic, the diastase in the urine is normal. In neurotic vomiting ammonia coefficient is often higher than in cases of true toxemia. When the pregnant woman has nephritis, the urine shows albumin with very low globulin. Sugar and diastase are usually below normal 10 units. The blood analysis shows the urea-content higher than normal, and marked rises occur in severe cases in which the urea content of over 0.1 gm. per cent. should be regarded as unfavorable, and uremia with fatal termination may result.

Pendulous Abdomen Complicating Rachitic Pelvis.—MICHOLOTTI (*Zentralbl. f. Gynäkol.*, May 15, 1920) describes the case of a primipara, aged forty-two years, at term, who had rupture of the membranes and forty-eight hours ineffectual labor. The abdomen was very pendulous and the uterus was sharply ante flexed, the fundus over the thigh. There were deformities in the spine, both legs, and signs of rachitis in various parts of the body. The fetus was alive. The os permitted examination by two fingers only and the lower segment was found tightly drawn over the fetal head. Under anesthesia the uterus could not be raised nor could the patient assume various postures, accordingly she was delivered by section, a large vigorous child being born. Under deep anesthesia the uterus could be raised because the muscles, previously in state of marked contraction, became relaxed.

PATHOLOGY AND BACTERIOLOGY

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Studies on Measles. II. Symptomatology and Pathology in Monkeys Experimentally Infected.—In a second communication, BLAKE and TRASK (*Jour. Exper. Med.*, 1921, xxxiii, 413) detailed the symptoms, course of the reaction and the histology of the lesions of the skin, labial mucous membrane and tongue which were found in the monkeys after intratracheal inoculations with nasopharyngeal secretions of human patients in the preëruptive and early eruptive stages of measles. The incubation period of the sixteen monkeys inoculated on the respiratory mucous membrane was seven days in the majority of animals but varied from six to ten days. After intravenous inoculation of whole blood, the incubation period was four days. The onset was characterized by listlessness, loss of appetite, drowsiness and diminution in the total leukocyte count. At times a sharp rise in temperature was encountered. The conjunctivæ became injected, photophobia and increased lachrimation ensued and small, discrete, hyperemic macules appeared on the labial mucous membrane, which latter tended, in two or three days, to increase in number and coalesce to form a diffuse, hyperemic enanthem on the labial and buccal mucous membranes. From one to five days after onset a red, maculopapular rash appeared on the skin, as a rule coming out first on the face and eventually spreading to the neck, arm and chest, abdomen and thighs and reaching its height in two or three days, at a time where the enanthem was fading. The exanthem in turn progressively faded and by six to ten days after onset all symptoms had disappeared. Some of the enanthematous

macules showed the minute bluish, white center as seen in Koplik spots. Occasionally a moderate diarrhea was noted in the earlier stages of the reaction. No symptoms of rhinitis and bronchitis were encountered. The skin and lesions, as shown by microscopic examination after fixation in Zenker's fluid and staining with alum hematoxylin and eosin, corresponded very closely to those described in cases of human measles by Ewing and by Mallory and Medlar. The lesions of the skin occurred both in the corium and epidermis, those in the latter being less numerous and conspicuous than in the former, where they were definite and typical. In the corium, they consisted of swelling and proliferation of the endothelial cells lining the capillaries and smaller veins, accumulation of endothelial leukocytes about the capillaries and active multiplication of these emigrated leukocytes. In addition there is a moderate exudation of serum into the pericapillary tissues, where in the earlier lesions, a very few eosinophils, polymorphonuclear leukocytes and lymphocytes might be present. No diapedesis of erythrocytes could be made out. The endothelial cells of the capillary walls appeared swollen and their cytoplasm was finely granular. Occasionally one was seen in mitosis. The emigrated endothelial leukocytes were young and active. Their nuclei were frequently lobulated and in the early cases these leukocytes were in active mitosis. In the epidermis in early cases, there were minute foci of serous exudate leading to swelling and vacuolation of the epithelial cells of the Malpighian layer. The serum sometimes accumulated under the cornified layer, producing tiny vesicles. There was a slight infiltration of these foci with endothelial leukocytes. The lesions in the labial mucous membrane were essentially the same as those occurring in the skin. Invasion of the epithelium was more marked than in the case of the epidermis. The lesions in the mucous membrane of the tongue were identical with those in the labial mucosa.

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Acute Respiratory Infection in Man Following Inoculations with Virulent Bacillus Influenzæ.—CECIL and STEFFEN (*Jour. Infect. Dis.*, 1921, xxviii, 201) state that virulent influenza bacilli, when injected into the nose and throat of healthy volunteers, may excite in them an acute respiratory disease similar in many respects to influenza but falling short of the typical clinical picture. In such cases influenza bacilli, biologically identical with those inoculated, may be recovered

from the discharges as long as symptoms persist and often for some time thereafter. Filtrates of *Bacillus influenzae* cultures when similarly injected into two healthy volunteers produced neither local nor constitutional reaction. The inoculation of healthy volunteers with virulent hemolytic streptococci may in some cases induce an acute follicular tonsillitis with fever and leukocytosis. A virulent pneumococcus Type IV, on the other hand, was injected into the nose and throat of two healthy volunteers with impunity.

Botulism in Cattle.—GRAHAM and SCHWARZE (*Jour. Bacteriol.*, 1921, vi, 69) isolated an anaërobic bacillus biologically resembling *Bacillus botulinus* (Type B) from a corn silage. Several cattle of the herd consuming the silage developed symptoms of forage poisoning on two different occasions and four animals died. It is possible that botulinus toxin in the ensilage was primarily related to the disease in question. The silage was regarded as unsafe for cattle, and after discontinuing its use in the daily rations the animals remained healthy. Botulinus antitoxin (Type B) proved efficacious in protecting guinea-pigs against lethal doses of toxin in unfiltered broth cultures produced by the anaërobic bacillus isolated from the corn silage. Forty-three cattle were injected with botulinus antitoxin and subsequently fed on silage. The animals remained apparently healthy. One control or untreated animal did not show visible illness and the value of the antitoxin in the feeding operations is therefore not conclusive. It is worthy of record that the treatment did not injure the animals and encouragement is offered for more extensive field trials in determining the value of the antitoxin in cattle against the ill-effects of otherwise nourishing rations containing *Bacillus botulinus* toxin which heretofore has advisedly been discarded. The latter item is of importance considering the increased cost of producing grain and forage.

Concerning the Antiseptic Action of Some Aromatic Fumes.—MACHT and KUNKEL (*Proc. Soc. for Exp. Biol. and Med.*, 1920, xviii, 68) state that while their experiments were of a crude character the results obtained were of so uniform a nature that they are inclined to conclude that the fumes produced by the burning or destructive dry distillation of various gums, spices and other aromatic substances of a similar nature certainly tend to exert an antiseptic action on the bacteria studied. This is, of course, of interest not only from the scientific point of view, but also to the historian as offering a possible explanation for the extensive employment of incense in connection with sacrificial rites, etc.

The Distribution of the Spores of *Bacillus Botulinus* in Nature.—MEYER and GEIGER (*Public Health Reports*, 1921, xxxvi, 4) regard the soil as the common source of the spores of the botulinus organism and cite examples to support this view. They consider it likely that the soil may be contaminated by manure. They regard the soil infection as prevailing in certain localities. The practical point is that food should be so sterilized in canning as to obviate danger. Cooking the canned food just before using is an added safeguard, and any canned fruits or vegetables showing the least sign of spoilage should be discarded.